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The Effect of Perceived Health Status on Patient Satisfaction

Hong Xiao, PhD, Janet P. Barber, PhD

College of Pharmacy and Pharmaceutical Science, Florida A&M University, Tallahassee, FL, USA

ABSTRACT

Objective: To examine the effect of perceived health status on three components of patient satisfaction.

Methods: The Household Component of the 1999 Medical Expenditure Panel Survey for people 35–64 years of age was used to examine the effect of perceived health status on patient satisfaction measured in terms of access to care, provider quality and quality of care. Descriptive statistics and multivariate regression were used to describe the subjects and to examine the relationship between patient satisfaction and perceived health status controlling for patient demographic factors, health factors and provider characteristics. All analyses used STATA 8.0 which is designed to analyze weighted data.

Results: A total of 4417 patients (71% women) met the inclusion criteria for the study. Patients who rated their health excellent or good scored higher on the three dimensions of patient satisfaction. Higher scores on one or more components of patient satisfaction were associated with being older, married, better educated and having higher income, health insurance and good mental health. Seeing the health-care provider for an old problem resulted in lower levels of patient satisfaction. Provider characteristics significantly related to patient satisfaction were listening to the patient, being a specialist, seeing patients in an office setting and being located in the South.

Conclusions: This study has shown that patient satisfaction is influenced by a person's self-perceived health status and other personal characteristics that are external to the delivery of health care. These findings suggest that patient satisfaction data should be used judiciously because a significant portion of the variation may be attributed to factors endogenous to the patient and therefore are not amenable to provider intervention.

Keywords: access to care, MEPS, patient satisfaction, perceived health status, quality of health care.

Introduction

In today's health-care environment where quality of care and accountability are stressed, patient satisfaction has become a widely assessed outcome for quality improvement. Satisfaction has been found to influence patient compliance, use of health services, continuity of care and presumably health status [1–5]. Patient satisfaction with health care has been studied extensively in different settings and among special populations, such as those with disabilities or chronic disease [6–36]. Patient satisfaction encompasses a number of dimensions. Among them, three dimensions, namely, access to care, professional staff (interpersonal interaction) and quality of care (technical competence), have been found to account for nearly two-thirds of the variance in overall patient satisfaction [23]. Research indicates that patient satisfaction can be influenced by many factors, both endogenous and exogenous to the care received. Patient characteristics, like race, sex, marital status and health condition have been found to be associated with satisfaction, although they may not be as important as factors specific to the care setting [24–26].

The purpose of this study is to understand the relationship between patient satisfaction and perceived health status. This information could be useful to health plans and health professionals in achieving better patient outcomes. Although studies have established a relationship between health status and patient satisfaction on a small scale in special populations [22,27], this is the first study to use a large national database to investigate the effect of health status on patient satisfaction for the general adult population.

Methods

Data Source

The 1999 Full Year Consolidated Data File from the Household Component of Medical Expenditure Panel Survey (MEPS) was used in this analysis. MEPS is a nationally representative survey of the U.S. civilian noninstitutionalized population maintained by the Agency for Healthcare Research and Quality and is available as a public use file with personal identifiers removed. The Household Component (MEPS-HC) collects detailed information at the individual and family levels related to demographics, perceived health

Address correspondence to: Hong Xiao, Florida A&M University, Dyson Pharmacy Building, Suite 200, Room D, 1520 S MLK BLVD, Tallahassee, FL 32307, USA. E-mail: hong.xiao@famu.edu
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status, use of health-care services, health-care charges and payments, health insurance coverage, access to care and satisfaction with access to care, professional staff and quality of care.

Study Sample

To be included in the study, respondents had to meet the following criteria: 1) 35–64 years of age at the time of data collection; 2) answered all the questions by themselves, i.e., not through a proxy; and 3) reported a usual source of health care (USC). Only one respondent (or reporting unit) per household is reported in MEPS.

Measures

Patient satisfaction: the dependent variable. Three dimensions of patient satisfaction were measured: access to care, professional staff, and quality of care, which will be referred to as "access," "provider," and "quality," respectively, hereafter. In the 1999 MEPS-HC the questions corresponding to access, provider and quality were as follows: 1) "Overall, how satisfied are you that members of your family can get health care if they need it?" 2) "Overall, how satisfied are you with the professional staff at your provider's office?" and 3) "Overall, how satisfied are you with the quality of care received from your provider?" Response options for these questions were "very satisfied," "somewhat satisfied," "not too satisfied" and "not at all satisfied." Patients tend to report high levels of patient satisfaction with health care. Therefore, to ensure adequate cell size for analysis, the three patient satisfaction variables were dichotomized into "very satisfied" and "not very satisfied," the latter including all responses other than "very satisfied."

Independent variables. To measure self-perceived health status, MEPS-HC asked "In general, compared to other people of your age, would you say that your health is excellent, very good, good, fair or poor?" A similar question addressed self-perceived mental health status. These two self-reported health status questions were dichotomized into "good to excellent" and "fair to poor." Responses to these questions were used to analyze the relationship between the three dimensions of satisfaction and self-perceived health status.

We also extracted from MEPS-HC other patient and provider information that could influence patient satisfaction. Patient-specific variables included age, sex, race/ethnicity, marital status, education, income, employment status and insurance status and reason for seeing provider (new problem or not; for preventive reasons or not). Provider-related variables included provider type (e.g., general practitioner, specialist), provider setting (office, hospital or emergency department), whether or not the respondent perceived the provider to be a good listener and geographic region as defined by the US Census Bureau. Table 1 defines each variable and explains how each variable was measured in the statistical procedures used in the study.

Statistical Analysis

Descriptive statistics provided a demographic profile of the study population. To estimate the three dimensions of patient satisfaction, multivariate logistic regression was used to control for the influence of

Table 1 Variables and measurement categories

	Definition	Measurement
Dependent Variables		
Access	Satisfaction with access to care	Dichotomous variable: (1) very satisfied (0) not very satisfied
Provider	Satisfaction with provider	Dichotomous variable: (1) very satisfied (0) not very satisfied
Quality	Satisfaction with quality of care	Dichotomous variable: (1) very satisfied (0) not very satisfied
Patient characteristics		
Age	Chronological age of respondent	Ordinal in cross-tabulations; continuous variable in regression analyses
Gender	Sex of respondent	Dichotomous variable: (1) male (0) female
Race/ethnicity	Racial and ethnic background of respondent	Categorical variable (dummy coded): non-Hispanic white, non-Hispanic black, Hispanic, American Indian, Asian
Marital status	Marital status of respondent	Dichotomous variable: (1) married (0) not married
Education	Completed years of education of respondent	Ordinal in cross-tabulations; continuous variable in regression analyses
Income	Annual personal income of respondent	Ordinal in cross-tabulations; continuous variable in regression analyses
Employment status	Employment status of respondent	Dichotomous variable: (1) unemployed (0) other
Insurance coverage	Insurance held during the year	Dichotomous variable: (1) uninsured (0) other
Physical health status	Self-perceived physical health	Dichotomous variable: (1) good to excellent health (0) fair or poor
Mental health status	Self-perceived mental health	Dichotomous variable: (1) good to excellent health (0) fair or poor
Problem type	Response to "Go to USC for new health problem"	Dichotomous variable: (0) yes (1) no
Preventive care	Response to "Go to USC for preventive reason"	Dichotomous variable: (0) yes (1) no
Provider characteristics		
Provider listens	Response to "Does the USC provider listen?"	Dichotomous variable: (1) yes (0) no
Provider specialty	USC provider type	Categorical variable (dummy coded): primary care MD, specialist MD, non-MD
Provider setting	USC Provider setting	Categorical variable (dummy coded): office, hospital, emergency room
Geographic region	US Census region of respondent's residence	Categorical variable (dummy coded): Northeast, Midwest, South, West

extraneous variables. The dependent variable was satisfaction as measured separately by access to care, provider satisfaction and quality of care (all dichotomous variables: 0-not very satisfied; 1-very satisfied). Independent variables included continuous or interval variables (age, total income, years of education) and dummy-coded categorical variables (race/ethnicity, marital status, employment status, insurance status, self-rated physical and mental health status, reasons for seeing the provider, provider type, provider setting, listening skills of the provider and geographic region). Table 1 indicates how each of the study variables was measured. The Hausman test was used to assess endogeneity between the independent and dependent variables.

STATA 8.0, a statistical program, was used to analyze the data because it takes into account complex sample designs and uses weights to make national estimates. Approval by the Institutional Review Board at Florida A&M University was obtained before proceeding with the data analysis.

Results

Table 2 summarizes the characteristics of the study sample. Of the 4417 respondents who met the study inclusion criteria, 71% were female, 65% were married and 68% were non-Hispanic white. The average completed years of education was 13. Three-fourths of the respondents were employed and one-fourth were uninsured. The average annual income of the study respondents was $29,375 in 1999. Most of the respondents rated their physical health (84%) and mental health (93%) as good, very good or excellent. About three-fourths of the respondents were very satisfied with their access to care (77%), the provider (75%) and quality of care (78%).

As expected, patient self-perceived health status was directly related to all three measures of patient satisfaction used in this study: access, provider and quality of care. The Wald chi-square and *P*-values indicated a goodness-of-fit for each of the three models explaining patient satisfaction. Table 3 presents the results from the multivariate logistic regressions.

The first regression model indicated that individuals who reported their physical health as excellent or good were twice as likely ($P < 0.01$) to be very satisfied with their family's access to care than were those who perceived their health as fair or poor. Other factors associated with patient satisfaction with access to care were being married ($P < 0.01$), more years of education ($P = 0.01$), higher income ($P = 0.01$) and provider listening to the patient ($P < 0.01$). Several factors were related to being less satisfied with access to care: not having health insurance coverage ($P = 0.03$), seeing the provider in a hospital rather than an office ($P = 0.04$) and living in the West ($P = 0.02$).

The second regression model showed that individuals who reported their physical health as excellent to good were nearly 50% ($P < 0.01$) more likely to be very satisfied with the provider's professional staff. The only other patient characteristic that contributed to higher satisfaction with the provider was age. Older patients were more likely to be very satisfied with their provider ($P < 0.01$). Again, provider listening to the patient significantly improved patients' satisfaction with the provider's professional staff ($P < 0.01$). People living in the South were more satisfied with their providers than were people in the Northeast ($P = 0.02$), Midwest ($P = 0.03$) or West ($P < 0.01$) and finally, seeing the health-care provider for an old problem contributed to less satisfaction with the provider ($P < 0.05$).

Similarly, the third logistic regression model demonstrated that patients who reported their physical health as excellent or good were 43% more likely to be very satisfied with the overall quality of care received ($P < 0.05$). Unlike the other measures of quality, satisfaction with the quality of care was also related to reporting excellent or good mental health ($P < 0.05$). Older respondents were more satisfied ($P < 0.01$) with the quality of care than were younger respondents. Patients who visited specialists were four times more satisfied ($P < 0.01$). As with the other two measures of patient satisfaction, satisfaction with the quality of care was higher when the provider listened to the patient ($P < 0.01$). Lower satisfaction with quality of care was associated with visiting the health-care provider for an old problem ($P < 0.01$), seeing the provider in the hospital ($P < 0.05$) and living in the West ($P < 0.01$) or Mid-West ($P < 0.01$). The Hausman test revealed no endogeneity.

Discussion

In this study using data from a nationally representative sample of noninstitutionalized adults aged 35–64, we examined the effect of self-reported health status on patient satisfaction with access to care, the professional staff and quality of care. We observed that self-perceived physical health status does effect patients' assessment of their satisfaction with medical care. Individuals who perceive themselves to be in excellent or good physical health are more likely to be satisfied with their health care. Nevertheless, health status seems to be more strongly related to satisfaction with access to care than to either satisfaction with the professional staff or overall quality of care received.

Consistent with the literature [5,19–21,24,25,28–34], our study showed that people who perceived themselves as being healthy were more likely to be satisfied with access to care, even while controlling for health insurance status. Healthier people do not need as much medical care and interact with health-care providers less frequently. They have less opportunity to

Table 2 Respondent and provider characteristics by patient satisfaction (expressed as percentage within response categories*)†

		Satisfaction with access (missing values = 17)		Satisfaction with provider (missing values = 46)		Satisfaction with QOC (missing values = 38)	
N =	4417	Very 3380	Not very 1020	Very 3257	Not very 1114	Very 3430	Not very 949
Age		($P = 0.36$)		($P < 0.01$)		($P < 0.01$)	
35–44	39.1	76.9	23.1	72.4	27.6	75.4	24.6
45–54	35.6	75.8	24.2	73.3	26.7	78.7	21.3
55–64	25.3	78.2	21.9	79.6	20.4	82.4	17.6
Gender		($P = 0.04$)		($P = 0.05$)		($P = 0.17$)	
Male	29.5	78.9	21.1	76.5	23.5	79.7	20.3
Female	70.5	76.0	24.0	73.7	26.3	77.8	22.2
Race/Ethnicity		($P < 0.01$)		($P = 0.02$)		($P < 0.01$)	
Non-Hispanic white	67.7	79.8	20.2	75.5	24.5	79.5	20.6
Non-Hispanic black	13.6	75.5	24.5	74.9	25.1	78.6	21.4
Hispanic	15.3	65.7	34.3	71.7	28.3	74.3	25.7
American Indian	0.7	67.7	32.3	61.3	38.7	87.1	12.9
Asian	2.7	73.6	26.5	66.7	33.3	69.2	30.7
Marital status		($P = 0.46$)		($P = 0.94$)		($P < 0.01$)	
Married	64.5	78.7	21.3	74.5	25.5	78.7	21.3
Not married	35.5	71.9	28.1	74.6	25.4	74.6	25.4
Education		($P < 0.01$)		($P < 0.01$)		($P < 0.01$)	
No degree	14.9	64.1	35.9	71.4	28.6	73.7	26.3
GED	5.3	68.0	32.0	67.5	32.5	71.4	28.6
High school	46.8	77.5	22.5	75.1	24.9	79.8	20.2
Bachelor's degree	14.8	83.5	16.5	75.9	24.2	77.0	23.0
Master's degree	7.9	84.3	15.7	81.8	18.2	85.6	14.4
Doctorate degree	1.4	81.0	19.0	76.7	23.3	88.5	11.5
Other degree	8.3	81.7	18.3	71.8	28.2	73.4	23.6
Annual personal income		($P = 0.07$)		($P < 0.01$)		($P < 0.01$)	
0–$9,235	25.1	68.4	31.6	70.7	29.3	76.2	23.8
$9,236–$19,306	27.2	74.0	26.0	74.0	26.0	77.7	22.3
$19,307–$35,000	21.3	81.5	18.5	76.6	23.4	78.6	21.4
>$35,000	26.4	84.2	15.8	76.8	23.2	80.7	19.3
Employment status		($P < 0.01$)		($P = 0.07$)		($P = 0.98$)	
Employed	75.7	70.9	29.2	72.4	27.6	78.4	21.7
Not employed	24.3	78.7	21.3	72.2	24.8	78.3	21.7
Health insurance status		($P = 0.72$)		($P = 0.32$)		($P = 0.56$)	
Insured	44.0	81.6	18.4	76.0	24.0	78.8	21.2
Uninsured	24.1	76.4	23.6	73.4	26.6	77.7	22.3
Inapplicable	31.9	70.5	29.5	73.3	27.6	78.1	21.9
Self-perceived physical health status		($P < 0.01$)		($P < 0.01$)		($P < 0.01$)	
Good to excellent	83.7	79.8	20.2	75.5	24.5	79.3	20.7
Fair to poor	16.3	61.6	38.4	69.3	30.7	73.5	26.5
Self-perceived mental health status		($P < 0.01$)		($P = 0.01$)		($P < 0.01$)	
Good to excellent	92.8	78.0	22.0	75.0	25.0	78.9	21.1
Fair to poor	7.2	62.1	37.9	67.9	32.1	71.0	29.0
Visit to USC provider for old problem		($P < 0.01$)		($P < 0.01$)		($P < 0.01$)	
Yes	1.8	60.3	39.7	57.1	42.9	50.7	49.3
No	98.2	77.1	22.9	74.8	25.2	78.8	21.2
Visit to USC provider for preventive care		($P = 0.01$)		($P = 0.02$)		($P < 0.01$)	
Yes	97.5	77.0	23.0	74.8	25.2	78.7	21.3
No	2.5	67.0	33.0	64.8	35.2	63.0	37.0
USC provider listens to patient		($P < 0.01$)		($P < 0.01$)		($P < 0.01$)	
Yes	94.4	78.3	21.7	76.3	23.7	80.6	19.4
No	5.6	51.0	49.0	40.6	59.5	35.3	64.7
USC provider type		($P = 0.07$)		($P < 0.01$)		($P < 0.01$)	
General/family practice	38.5	77.1	22.9	77.0	23.0	82.3	17.7
Internal medicine	12.4.	81.2	18.8	81.2	18.8	85.6	14.4
Pediatrics	0.2	100.0	0.0	85.7	14.3	100.0	0.0
Obstetrics/Gynecology	1.4	82.5	17.5	82.5	17.5	92.1	7.9
Surgery	0.2	89.9	11.1	89.0	11.0	100.0	0.0
Non-MD (e.g., RNP, PA)	0.5	81.8	18.2	77.3	22.7	90.0	10.0
Inapplicable	44.8	74.9	25.1	70.0	30.0	71.5	28.5
Location of USC provider		($P < 0.01$)		($P < 0.01$)		($P < 0.01$)	
Office	84.8	78.0	22.0	75.6	24.4	79.7	20.3
Hospital	14.0	70.9	29.1	68.3	31.7	70.5	29.5
Emergency department	1.0	69.1	30.9	71.4	28.6	76.2	23.8
Geographic region		($P < 0.01$)		($P < 0.01$)		($P < 0.01$)	
Northeast	18.9	80.1	19.9	73.8	26.2	79.5	20.5
Midwest	21.4	81.8	18.2	74.7	25.3	78.1	21.9
South	37.7	75.4	24.6	78.1	21.9	81.2	18.8
West	22.0	71.6	28.4	68.8	31.2	72.6	27.4

*Percentages that do not sum to 100 are due to rounding.
†*P*-values correspond to chi-square statistics.

Table 3 Logistic regression models predicting patient satisfaction with access, provider and quality

Predictors (reference group)	Odds ratios for patient satisfaction with		
	Access N = 4362	Provider N = 4333	Quality N = 4341
Patient characteristics			
Age	1.01	1.02†	1.02†
Marital status (not married)			
Married	1.57†	1.00	1.07
Years of education completed	1.04*	1.01	1.03
Total annual personal income (in $1000 sec)	1.00†	1.00	1.00
Health insurance status (insured)			
Not insured	0.78*	0.91	0.91
Health status (fair or poor)			
Good or excellent	2.03†	1.49†	1.43*
Mental health status (fair or poor)			
Good to excellent	1.32	1.29	1.53*
Reason for visit to USC provider (new problem)			
Old problem	0.71	0.51*	0.27†
Usual source of care provider characteristics			
Provider listens (no)			
Yes	3.08†	3.52†	6.40†
Specialty (primary care physician)			
Specialist physician	1.30	0.93	4.84†
Provider setting (office)			
Hospital	0.77*	0.90	0.76*
Geographic location (South)			
Northeast	1.07	0.76*	0.82
Midwest	1.25	0.78*	0.77*
West	0.76*	0.66†	0.65†
Wald chi-square	240.92	132.67	223.86
P	<0.001	<0.001	<0.001

*P-value < 0.05.
†P-value < 0.01.

experience problems with access to health care and therefore may express more satisfaction with access. The influence of self-perceived health status on satisfaction with access may have been even stronger in our study if MEPS had asked about the respondent's access to health care, rather than family members' access.

The effect of perceived health status on satisfaction with the provider and quality of care, although statistically significant, was less compelling. The weaker association for provider satisfaction may be a function of MEPS' wording, which asked about satisfaction with the "the professional staff" in the office. Perhaps asking about satisfaction specifically with the primary provider would have produced a stronger association. Contrary to our expectation, the association of self-reported health status to the third dimension of patient satisfaction—satisfaction with the quality of care received—was the weakest. Of the three measures available in the MEPS data, we felt that satisfaction with quality of care was the most direct measure of patient satisfaction and therefore would have the strongest association with self-perceived health status. The fact that it does not suggests that further research is needed to test the relationship. Perhaps, patient perception of quality of care is more susceptible to variable interpretation than the two other measures.

Despite these observations and disclaimers, evidence from this study demonstrates the important influence of self-perceived health status on patient satisfaction. People who perceive themselves to be in poorer health may have lower patient satisfaction because they associate their poorer health with the health care they receive. Conversely, individuals who feel well may project that sense of wellness to being satisfied with their health-care environment. These findings suggest that patient satisfaction may not be as closely associated with tangible measures of quality care (such as actual care received, provider characteristics or access to care) as previous research has suggested, but also a function of patient well-being and other personal characteristics unrelated to care.

Other patient characteristics that were significantly related to patient satisfaction included age, marriage, education, income, health insurance status, mental health status and reason for seeing the health-care provider. Older respondents were mildly more satisfied with provider and quality. This is consistent with some of the literature [4,20,24,36] and conflicts with others [21,22]. People who were married were more likely to be very satisfied with access, provider and quality than those who never married, which is consistent with previous findings [34]. People who completed higher levels of education, had higher income and had health insurance were more satisfied with access to health care. These results are consistent with the literature [35].

This study found that sex was unrelated to patient satisfaction. The results on sex from other studies have been mixed [19,21,22,32,36]. The inconsistent results may be due to differences in the populations studied. Our study found no relationship between race/ethnicity and patient satisfaction, contrary to the findings of a study based on a different nationally representative sample for 1998. Using five composite measures of patient satisfaction, Haviland et al. found statistically significant differences between white and black people (higher on one measure, lower on another), Asian/Pacific Islanders (lower on four measures), and Hispanics (lower on three measures) [24].

The best predictor of patient satisfaction in our study was the provider listening to the patient, a variable not typically included in studies of satisfaction. Patient satisfaction can be improved by practitioners listening to their patients. Patients are more likely to be satisfied with the care received from specialists than primary care physicians. Patient satisfaction varied across regions. Patients in the South were the most satisfied. Those living in the West were least satisfied on all three dimensions of satisfaction, which may be related to the higher penetration of managed care in the west. Generally, members of managed care organizations are less satisfied with care than those who have more flexibility in choosing their health-care providers. Patients in the Midwest were less likely to be satisfied with the provider and care received than were patients in the South. And people in the Northeast were less likely to be satisfied with the provider than in the South. Why patient satisfaction should vary across regions of the country is unclear.

This study has limitations associated with the use of secondary data. First, causal relationships cannot be examined because time sequence information is absent to determine what occurred first: self-perceived health status or satisfaction with health care. We explored associations between health status and patient satisfaction, but could not establish the direction of the causal effect. Second, investigators are constrained by the information available in a secondary data set. The questions asked may not capture the meaning intended by the researchers (e.g., asking about access to care for the family rather than for the respondent). If we had collected our own data, we would have used different questions that were more comparable to the patient satisfaction literature relating to access to care, interpersonal interaction, and technical competence.

An important issue in any study of patient satisfaction is the lack of variation on measures of patient satisfaction. In general, patients report being satisfied. In this study, 77%, 75% and 78% of the respondents reported they were very satisfied on the three dimensions measured. Less than 25% of the respondents were somewhat satisfied, not too satisfied or not at all satisfied. High levels of patient satisfaction make finding predictors of satisfaction and dissatisfaction more difficult. A possible reason for lack of variation on satisfaction is self-selection bias. Three-fourths of the sample had health insurance. People who have insurance are likely to be satisfied with access, the provider and quality of care, because they usually have the option of changing insurance plans and providers, if they are dissatisfied.

Conclusion and Future Research Directions

In conclusion, patient satisfaction is influenced by a person's self-perceived health status. Those who perceive themselves in better health are more likely to report higher levels of patient satisfaction. Furthermore, this study has demonstrated that other patient-specific characteristics, such as age, and marital status also affect the patient's self-reported satisfaction. These observations suggest that patient satisfaction should be interpreted cautiously when comparing health plans or even nations on health-care quality. The results also support the idea that health care should be tailored to the patient's specific characteristics and needs. Future research needs to recognize the important role played by individual patient characteristics on patient satisfaction with health care, while focusing on factors amenable to change by health-care practitioners and systems.

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